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Two Types of Change

Although the 21 responsibilities described in Chapter 4 are useful in their own right, they tell us little about how the responsibilities relate to one another. It seems logical that the responsibility of Relationships, let's say, might be related to Communication, which might be related to Culture, and so on. To address this issue of relatedness, we conducted a factor analysis using the responses to a questionnaire designed to measure principals' behavior in terms of the 21 responsibilities. The specifics of that factor analysis and the questionnaire we used are described in Technical Note 11 (p. 161). In brief, though, a factor analysis helps identify the underlying traits (factors) that are common to a number of observable characteristics. In this case, the observable characteristics are the 21 leadership responsibilities.

The primary finding from our factor analysis was that two traits or factors seem to underlie the 21 responsibilities. These two factors are first-order change and second-order change.

First- and Second-Order Change

One of the constants within K-12 education is that someone is always trying to change it—someone is always proposing a new program or a new practice. Many of these programs and practices are well thought-out, well articulated, and even well researched. Yet many, maybe even most, educational innovations are short-lived. Cuban (1987) has chronicled the fate of a number of innovations, all of which were basically sound. Some of the more visible ones that have not endured are programmed instruction, open education, the Platoon System, and flexible scheduling.

A question posed by Cuban and many others is, Why did these innovations fail? Our factor analysis provides a possible and plausible explanation. Specifically, our factor analysis (as well as our collective experience) indicates that the leadership supporting an innovation must be consistent with the order of magnitude of the change represented by that innovation. If leadership techniques do not match the order of change required by an innovation, the innovation will probably fail regardless of its merits. Some innovations require changes that are gradual and subtle; others require changes that are drastic and dramatic. For the purposes of this discussion, we refer to these categories of change as first-order change and second-order change, respectively.

First-order change is incremental. It can be thought of as the next most obvious step to take in a school or a district. Second-order change is anything but incremental. It involves dramatic departures from the expected, both in defining a given problem and in finding a solution. In other publications we have described the difference between first- and second-order change as that between "incremental change" and "deep change" (see Waters, Marzano, & McNulty, 2004a, 2004b). Incremental change fine-tunes the system through a series of small steps that do not depart radically from the past. Deep change alters the system in fundamental ways, offering a dramatic shift in direction and requiring new ways of thinking and acting.

Using other names and terminology, a great many theorists have discussed this basic dichotomy. For example, Heifetz (1994) discusses the distinction between first- and second-order change by describing Type I, Type II, and Type III problems. He notes that Type I problems are those for which there is a reasonable expectation that traditional solutions will suffice. Type II problems are those that might be fairly well defined, but for which no clear-cut solution is available. Type III problems are those for which current ways of thinking do not provide a solution. Whereas Type I and Type II problems typically require first-order change, Type III problems require second-order change.

Argyris and Schön (1974, 1978) address the distinction between first- and second-order change in their discussion of single-loop learning and double-loop learning. Single-loop learning occurs when an organization approaches a problem from the perspective of strategies that have succeeded in the past. When a particular strategy is successful, it reinforces its utility. If a strategy is not successful, another is tried until success is achieved. In a sense, then, single-loop learning teaches us which of our current set of strategies works best in different situations. Double-loop learning occurs when no existing strategy suffices to solve a given problem. In these situations, the problem must be conceptualized differently or

new strategies must be conceived. Double-loop learning, then, expands an organization's view of the world while adding new strategies to an organization's repertoire.

The Difficulty of Second-Order Change

The common human response is to address virtually all problems as though they were first-order change issues. It makes sense that we would tend to approach new problems from the perspective of our experiences—as issues that can be solved using our previous repertoire of solutions. Argyris and Schön (1974) explain this tendency in terms of “mental maps.” They argue that individuals and organizations have mental maps regarding how to act in situations. When faced with a new situation, we consult one or more of our mental maps. Unfortunately, solutions to most recurring modern-day problems require a second-order perspective. Heifetz (1994) notes:

For many problems, however, no adequate response has yet been developed. Examples abound: poverty at home and abroad, industrial competitiveness, failing schools, drug abuse, the national debt, racial prejudice, ethnic strife, AIDS, environmental pollution. No organizational response can be called into play that will clearly resolve these kinds of problems. (p. 72)

Fritz (1984) explains the tendency to approach all situations as first-order change issues in the following way:

A common rule of thumb in life is to have a formula about how things should work so that if you learn the formula, you will always know what to do. From a reactive-responsive orientation, this notion is very appealing, because with such a formula you would hypothetically be prepared to respond appropriately to any situation. Unfortunately, at best this would prepare you for situations that are predictable and familiar. Your mastery of those situations would be similar to that of a well-trained mouse in a maze. From the orientation of the creative, on the other hand, the only rule of thumb about process is not to have a rule of thumb. (p. 73)

Finally, Fullan (2001) explains: “The big problems of the day are complex, rife with paradoxes and dilemmas. For these problems, there are no once-and-for-all answers” (p. 73).

The comments of Heifetz, Fritz, and Fullan are apropos to schools that approach persistent problems in the same manner year after year. Witness the decades-old problem of the achievement gap between children from poverty versus children not from poverty. This issue has been a focus of educational reform for decades. Indeed, it was part of President Lyndon Johnson's War on Poverty in the mid-1960s. In spite of decades of attention, the problem persists. Clarke

(2000) explains that to change schools in response to issues like this one, we need to develop new ways of thinking about them:

We need to develop a new language of improvement that is better designed to respond to the problems of the present and lead into the future rather than one that is designed around the solution of problems belonging to an age gone by (p. 48)

With all due respect to Clarke's advice, words like these are perhaps too easily spoken, for undertaking second-order change is never a small task. In fact, second-order change is so complex that it is best not entered into lightly. Indeed, Prestine (1992) cautions that second-order change cannot be approached hesitantly. Sizer asserts that second-order change calls for decisive, swift action: "I'm increasingly persuaded that schools that go slow and a little at a time end up doing so little that they succeed in only upsetting everything without accruing the benefits of change" (in Fullan, 1993, p. 8)

The differences in first- and second-order change, combined with the natural inclination to approach all changes as first order in nature, provide a plausible explanation for the failed innovations chronicled by Cuban (1987). Perhaps these innovations represented second-order changes in education but were managed and led in a manner more appropriate to first-order change. Consider, for example, open education, identified by Cuban as a failed innovation with research supporting it. Indeed, Hedges and Olkin's (1985) review of the research on open education indicates that it had a positive effect on students' attitudes and achievement. Yet it was short-lived. On the surface, it might appear that open education represented a simple alteration in the physical structure of schools—it used large open spaces where different groups of students might be simultaneously involved in different activities. However, this simple physical change required alterations in scheduling protocols, in how teachers prepare for instruction and interact with one another, in how content is presented, and more. In short, open education required second-order change regarding the running of a school. A failure to recognize this fact coupled with the natural inclination to approach all innovations as first-order change might have caused those leading the innovation to employ inappropriate leadership behaviors. Ultimately, this led to the downfall of the innovation.

Leadership for First- Versus Second-Order Change

Clearly the distinction between first-order change and second-order change is an important one, particularly for schools. From the perspective of the findings from our meta-analysis, it raises the basic question, Which of the 21 responsibilities are

appropriate to first-order change and which are appropriate to second-order change?

Leadership for First-Order Change: Managing the Daily Life of a School

The results of our factor analysis indicated that all 21 responsibilities are important to first-order change at least to some degree. This makes intuitive sense. Within our meta-analysis, the 21 responsibilities were exhibited in a wide variety of schools in a wide variety of situations. However, our factor analysis indicated not all 21 responsibilities are equally important to first-order change. Here is how the responsibilities ranked in relationship to first-order change as found in our factor analysis (see Technical Note 12 on p. 168 for a discussion of how this rank order was computed):

- 1 Monitoring/Evaluating
- 2 Culture
- 3 Ideals/Beliefs
- 4 Knowledge of Curriculum, Assessment, and Instruction
- 5 Involvement in Curriculum, Assessment, and Instruction
- 6 Focus
- 7 Order
- 8 & 9 Affirmation; Intellectual Stimulation (a tie in rank order)
- 10 Communication
- 11 Input
- 12 Relationships
- 13 Optimizer
- 14 Flexibility
- 15 Resources
- 16 Contingent Rewards
- 17 Situational Awareness
- 18 Outreach
- 19 Visibility
- 20 Discipline
- 21 Change Agent

This listing provides an interesting perspective on leadership for first-order change. It provides a different perspective on the relative importance of the 21 responsibilities from that implied in Figure 4.2 (p. 63). There we cautioned that it would be a mistake to overinterpret the ranking in Figure 4.2. Likewise, here we caution that the ranking in the list above should not be considered a negative

mandate on the lower-ranked responsibilities. Change Agency, Discipline, Visibility, and other lower-ranked responsibilities must receive as much attention in the day-to-day operations as Monitoring/Evaluating, Culture, Ideals/Beliefs, and other highly ranked responsibilities.

Saying that all 21 responsibilities are related to first-order change is another way of saying that all 21 should define the standard operating procedures in a school. This notion is reflected in our subtitle for this section, "Managing the Daily Life of a School." First-order change is a by-product of the day-to-day operations of the school. The routine business of schooling demands corrections and alterations that, by definition, are first order in nature. The responsibilities, then, can be considered the management tools of effective school leaders. Figure 5.1 restates the 21 responsibilities in terms of specific management behaviors.

The list in Figure 5.1 is daunting. If all of these responsibilities are necessary to effectively manage the day-to-day operations of a school, how can a school leader possibly accomplish the task? We offer a solution to this problem in Chapter 7. Here we simply note that our factor analysis provided evidence of the complexity and breadth of the task of leading and managing a school through the routine changes and adjustments encountered throughout a school year.

Leadership for Second-Order Change

Unlike first-order change, we found that second-order change is related to seven of the 21 responsibilities in our factor analysis. They are the following:

- 1 Knowledge of Curriculum, Instruction, and Assessment
- 2 Optimizer
- 3 Intellectual Stimulation
- 4 Change Agent
- 5 Monitoring/Evaluating
- 6 Flexibility
- 7 Ideals/Beliefs

Again, these responsibilities are listed in rank order according to their relationship with second-order change. Considered at face value, this listing indicates that a principal seeking to provide leadership for a second-order change initiative should have the following priorities:

- 1 Being knowledgeable about how the *innovation* will affect curricular, instructional, and assessment practices and providing conceptual guidance in these areas (Knowledge of Curriculum, Instruction, and Assessment)

FIGURE 5.1
The 21 Responsibilities and Day-to-Day Management of a School

Managing a school involves

- 1 Establishing an effective monitoring system to provide feedback on the effectiveness of the school's curriculum instruction and assessment practices and their effect on student achievement (Monitoring/Evaluating)
- 2 Building and maintaining a culture in which a common language is employed ideas are shared and staff members operate within the norms of cooperation (Culture)
- 3 Operating from a well-articulated and visible set of ideals and beliefs regarding schooling, teaching, and learning (Ideals/Beliefs)
- 4 Seeking out and keeping abreast of research and theory on effective practices in curriculum, instruction and assessment (Knowledge of Curriculum Instruction and Assessment)
- 5 Actively helping teachers with issues regarding curriculum instruction and assessment in their classrooms (Involvement in Curriculum Instruction and Assessment)
- 6 Establishing concrete goals relative to student achievement as well as curriculum instruction and assessment practices in the school and keeping these prominent in the day-to-day life of the school (Focus)
- 7 Establishing procedures and routines that give staff and students a sense of order and predictability (Order)
- 8 Recognizing and celebrating the legitimate successes of individuals within the school as well as the school as a whole; also recognizing and acknowledging failures when appropriate (Affirmation)
- 9 Fostering knowledge of research and theory on best practices among the staff through reading and discussion (Intellectual Stimulation)
- 10 Establishing and fostering clear lines of communication to and from the staff as well as within the staff (Communication)
- 11 Establishing and fostering procedures that ensure that staff members have input into key decisions and policies (Input)
- 12 Attending to and fostering personal relationships with the staff (Relationships)
- 13 Providing an optimistic view of what the school is doing and what the school can accomplish in the future (Optimizer)
- 14 Inviting and honoring the expression of a variety of opinions regarding the running of the school and adapting one's leadership style to the demands of the current situation (Flexibility)
- 15 Ensuring that the staff members have the necessary resources support and professional development to effectively execute the teaching and learning process (Resources)
- 16 Expecting and recognizing superior performance from the staff (Contingent Rewards)
- 17 Being keenly aware of the mechanisms and dynamics that define the day-to-day functioning of the school and using that awareness to forecast potential problems (Situational Awareness)
- 18 Being an advocate of the school to all relevant constituents and ensuring that the school complies with all important regulations and requirements (Outreach)
- 19 Being highly visible to teachers, students, and parents through frequent visits to classrooms (Visibility)
- 20 Protecting staff members from undue interruptions and controversies that might distract them from the teaching and learning process (Discipline)
- 21 Being willing to challenge school practices that have been in place for a long time and promoting the value of working at the edge of one's competence (Change Agent)

- 2 Being the driving force behind the new *innovation* and fostering the belief that it can produce exceptional results if members of the staff are willing to apply themselves (Optimizer)
- 3 Being knowledgeable about the research and theory regarding the *innovation* and fostering such knowledge among staff through reading and discussion (Intellectual Stimulation).
- 4 Challenging the status quo and being willing to move forward on the *innovation* without a guarantee of success (Change Agent)
- 5 Continually monitoring the impact of the *innovation* (Monitoring/Evaluating).
6. Being both directive and nondirective relative to the *innovation* as the situation warrants (Flexibility)
- 7 Operating in a manner consistent with his or her ideals and beliefs relative to the *innovation* (Ideals/Beliefs).

A number of aspects of this listing provide insight into leadership for second-order change. First, notice that the generalizations are couched in terms of an *innovation*. This is because second-order change manifests itself only in the context of a specific issue that is being addressed or a problem that is being solved. It is not something abstract or subtle. One does not engage in second-order change by simply talking about it. Fritz (1984) warns of the dangers of grandiose talk that is not followed by concrete action:

This strategy is often employed by people who "hold the vision" while ignoring what is going on around them. These are the idle dreamers who give real visionaries a bad name. Not to confuse a creator with a dreamer. Dreamers only dream, but creators bring their dreams into reality. Only an accurate awareness of reality and an accurate awareness of your vision will enable you to form structural tension as an important part of the creative process. (p. 118)

Second, three of the seven responsibilities that are important aspects of second-order change are also listed as top priorities in the context of first-order change: Monitoring/Evaluating, Ideals/Beliefs, and Knowledge of Curriculum, Instruction, and Assessment. We might infer that behaviors within these responsibilities are vital to *any* type of change. Whether an innovation represents a small change (first-order) or a large change (second-order), a principal must establish a monitoring system that allows her to identify effective versus ineffective practices in curriculum, instruction, and assessment and evaluate the impact on student achievement. To do so, the principal must have and seek out knowledge of best practices in curriculum, instruction, and assessment. As a foundation for actions, the principal must communicate a

strong set of ideals and beliefs. However, the principal's behavior must be consistent with the ideals and beliefs espoused. Behavior that is inconsistent with announced ideals and beliefs undermines any change initiative, large or small. Argyris and Schön (1974) discuss this dynamic by referring to "espoused theories" as opposed to "theories-in-use":

When someone is asked how he would behave under certain circumstances, the answer he usually gives is his espoused theory of action for that situation. This is the theory of action to which he gives allegiance, and which, upon request, he communicates to others. However, the theory that actually governs his actions is this theory-in-use (pp 6-7)

Argyris and Schön further explain that leaders all too often espouse one set of ideals and beliefs yet operate from another—theories-in-use contradict their espoused theories. Apparently such a discrepancy rapidly erodes trust in the leader's fitness to manage.

Third, three of the seven responsibilities important to second-order change are ranked low in terms of their relative importance to first-order change. Specifically, the responsibility of Change Agent is important to second-order change but is rated last in relative importance to first-order change. This makes intuitive sense. Behaviors such as challenging the status quo seem far more appropriate to second-order change than to first-order change. Similarly, the responsibilities of Optimizer and Flexibility, although critical to second-order change, are ranked 13th and 14th, respectively, in importance to first-order change. Again this makes sense. Leadership behaviors that focus on the long-term potential of an innovation (Optimizer) and adapting to a changing landscape (Flexibility) are probably not vital to the incremental, predictable alterations that characterize first-order change but might be critical to large leaps that are not logical extensions of the past.

Perhaps the most revealing aspect of our factor analysis is that some responsibilities are negatively affected by second-order change. These responsibilities are the following:

1. Culture
2. Communication
3. Order
4. Input

As before, these responsibilities are listed in terms of the strength of relationship with second-order change. However, in this case that relationship is negative. That is, Culture has the strongest negative relationship with second-order change, and so on. It is important to understand that although the specific behaviors within these

responsibilities have a negative relationship with second-order change, this does not mean that the school leader actively tries to subvert these responsibilities. It does mean that the school leader might pay a certain price for the implementation of a second-order change innovation. Specifically, a principal seeking to provide leadership for second-order change might have to endure the following perceptions:

- Team spirit, cooperation, and common language have deteriorated as a result of the innovation (Culture).
- Communication has deteriorated as a result of the innovation (Communication).
- Order and routine have deteriorated as a result of the innovation (Order).
- The level of input from all members of the staff has deteriorated as a result of the innovation (Input).

Note that the statements are all couched in terms of staff perceptions of the second-order change innovation being implemented. Again, within second-order change, a leader does not try to subvert any of the 21 responsibilities. However, the leader realizes that some staff members might perceive things deteriorating as a result of the innovation. Researchers have alluded to this phenomenon. For example, Fullan (2001) notes that "the more accustomed one becomes to dealing with the unknown, the more one understands that creative breakthroughs are always preceded by periods of cloudy thinking, confusion, exploration, trial and stress; followed by periods of excitement, and growing confidence as one pursues purposeful change, or copes with unwanted change" (p. 17). Heifetz (1994) explains the phenomenon in terms of the expression of competing values: "The inclusion of competing value perspectives may be essential to adaptive success" (p. 23). Fullan (1993) further explains that the process of second-order change is sometimes quite messy:

"Ready, fire, aim" is the more fruitful sequence if we want to take a linear snapshot of an organization undergoing major reform. Ready is important; there has to be some notion of direction, but it is killing to bog down the process with vision, mission, and strategic planning before you know enough about dynamic reality. Fire is action and inquiry where skills, clarity, and learning are fostered. Aim is crystallizing new beliefs, formulating mission and vision statements, and focusing strategic planning. Vision and strategic planning come later. (pp. 31-32)

Finally, Fullan (1993) adds that "those individuals and organizations that are most effective do not experience fewer problems, less stressful situations, and greater fortune, they just deal with them differently" (p. 91).

The implications of the findings on second-order change from our factor analysis are far-reaching. At the most elementary level the message is that second-order

change is a horse of a different color from a leadership perspective. To successfully implement a second-order change initiative, a school leader must ratchet up his idealism, energy, and enthusiasm. Additionally, the school leader must be willing to live through a period of frustration and even anger from some staff members. No doubt this takes a great personal toll on a school leader and might explain why many promising practices in education have not led to improved student achievement and ultimately have been abandoned. In Chapter 7 we address some specific ways that a school leader can manage second-order change.

Summary and Conclusions

Our factor analysis provided insight into how the 21 responsibilities interact and are applied. When involved in the day-to-day first-order changes and corrections that a school faces, the school leader must attend to all 21 responsibilities as a regular aspect of managing the school. When involved in second-order change initiatives that are dramatic departures from the past, the leader must emphasize 7 responsibilities. Additionally, the leader might have to endure the perception among some staff members that behavior relative to 4 of the 21 responsibilities has eroded.